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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,383

03/31/2006

Hironari Akashi

MAT-8823US

2319

52473

7590

07/20/2010

RATNERPRESTIA

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EXAMINER

BAYOU, AMENE SETEGNE

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

07/20/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,383	Applicant(s) AKASHI ET AL.	
	Examiner AMENE S. BAYOU	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/28/08 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

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Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102

that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 7, 8, 11, 12, 16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Fumitoshi (Japanese patent publication JP2001073948.A machine translation is attached)

3. In re claim 1, 7, 8, 11, 12, 16 and 18 Fumitoshi discloses an electric compressor including:

- A **hermetic compressor** ,in **figure 1**,comprising :a **hermetic container (51)** ;a **motor element (53)** accommodated in the **hermetic container (51)** ; and a **compressing element (52)** that is accommodated in the hermetic container (51) and driven by the **motor element (53)** , wherein the **compressing element (52)** has a shaft including an **eccentric shaft and a main shaft (54,56)** , and a **main bearing (77)** for pivoting the main shaft , the motor element is a **bipolar permanent magnet motor (abstract)** that has a **stator (67)** including a stator core and a **rotor (55)** including a rotor core ,the rotor core defines a **hollow bore (69)** extending from a first axial end of the rotor core ,the first axial end on the compressing element side of the rotor core ,and the rotor core includes a **built in permanent magnet (70a)** ,an axial length of the permanent

magnet being less than an axial length of the rotor core (**21 ;figure 8**) ,the permanent magnet being positioned in the rotor core so that it extends from a second axial end of the rotor core opposite the hollow bore, the **main bearing (77)** , is made of **magnetic material (paragraph [0055])** , the motor element is a **self-starting permanent magnet synchronous motor (paragraph [0036])** the motor element has **plurality of conductor bars** (inherently) of a cage conductor for start on the outer periphery of the rotor core, and the permanent magnet is disposed in the inner peripheral side of the conductor bars and wherein the **permanent magnet is a rare-earth magnet, (paragraph [0042])**. In re claim 8, Please note that in accordance to MPEP 2113, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. Please also note that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product, i.e., the main bearing, does not depend on its method of production, i.e. ----. ***In re Thorpe, 227 USPQ 964, 966 (Federal Circuit 1985).***

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Alternate Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the

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subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3,5-18 are rejected under 35 U.S.C 103(a) as being unpatentable over Kojima et al. (20040191094) in view of Sasaki et al. (WO01/06624 .Please note that US patent number 6727627 which is functionally equivalent is used).

6. In re claim 1, Kojima et al disclose an electric compressor including:

- A **hermetic compressor** ,in **figure 3**,comprising :a **hermetic container (101)** ;a **motor element (203)** accommodated in the **hermetic container (101)** ; and a **compressing element (109)** that is accommodated in the **hermetic container (101)** and driven by the **motor element (303)** , wherein the **compressing element (110)** has a shaft including an **eccentric shaft (117)** and a **main shaft (116)** , and a **main bearing (320)** for pivoting **the main shaft (116)** , the motor element is a **bipolar permanent magnet motor (paragraph [0052])** that has a **stator (113)** including a stator core and a **rotor (315)** including a rotor core ,the rotor core defines a **hollow bore (306)** extending from a first axial end of the rotor core, the first axial end on the compressing element side of the rotor core, and the **rotor core (315)** includes a built-in permanent magnet , An axial length of the **permanent magnet (315a)** being less than the axial length of the rotor core. Kojima et al ,however fail to disclose the following limitation which is taught by Sasaki et al:
 - the permanent magnet (45) being positioned in the rotor core so that it extends from a second axial end of the rotor core opposite the hollow bore (51) ,in figures 17,18.

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7. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the compressor of Kojima et al et al by positioning the permanent magnet so that it starts from the second end of the rotor core opposite the hollow bore since it can be installed easily and fixed axially (as opposed to the magnets 315a of Kojima located on the outer periphery of the iron core).

8. In re claim 2 Kojima et al in view of Sasaki et al as applied to claim 1 disclose the claimed invention:

Kojima et al disclose:

- The axial length of the rotor core (315) is longer than an axial length of a stator core (113) of the stator core, in figure 3.

9. In re claim 3, Kojima et al in view of Sasaki et al as applied to claim 2 disclose the claimed invention:

Kojima et al disclose:

- Both axial ends of the rotor core (115) are disposed outside both axial ends of the stator core (113), respectively, in figure 3.

10. In re claim 5, Kojima et al in view of Sasaki et al as applied to claim 2 disclose the claimed invention:

Kojima et al disclose:

- The permanent magnet covers a region having no bore in the axial direction of the rotor, in figure 1.

11. In re claim 6, Kojima et al in view of Sasaki et al as applied to claim 2 disclose the claimed invention:

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Kojima et al disclose:

- The rotor core (315) has a cylindrical through hole having a first diameter into which the shaft (104) is inserted, the bore is a cylindrical recessed part that is formed in the upper part of the through hole and has a second diameter (306) larger than the first diameter (i.e. the diameter that fits shaft 104) ,the permanent magnet (315a) covers a region of the through hole having the first diameter in an axial direction of the rotor core, in figure 3 and 4.

12. In re claim 7, Kojima et al in view of Sasaki et al as applied to claim 1

disclose the claimed invention:

Kojima et al disclose:

- The main bearing (120), in figure 3, is made of magnetic material (paragraph [0039]), and the wide magnetic path is provided (i.e. due to the fact that axial length of the rotor core is longer than axial length of a stator core of the stator as shown in figure 3 and also discussed in claim 2 above) to smooth the flow of the magnetic flux by the permanent magnet.

13. In re claim 8, Kojima et al in view of Sasaki et al as applied to claim 7

disclose the claimed invention:

Kojima et al disclose:

- The main bearing (120) is one of a casting and a molded product that is made of iron- based sintered material, in paragraph [0039]). Please note that in accordance to MPEP 2113, the method of forming the device is not germane to the issue of patentability of the

device itself. Therefore, this limitation has not been given patentable weight. Please also note that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product, i.e., the main bearing, does not depend on its method of production, i.e. ----. ***In re Thorpe, 227 USPQ 964, 966 (Federal Circuit 1985).***

14. In re claim 9 and 13, Kojima et al in view of Sasaki et al disclose the claimed invention except mentioning that the axial length of the bore is 1/3 of axial length of the rotor core or more. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the proper axial length of the bore based to get the practical compressor size, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).*

15. In re claim 10 and 14, Kojima et al in view of Sasaki et al disclose the claimed invention except mentioning that the clearance between the surface of the bore and the Outer diameter of the main bearing is 0.5 to 3 mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the proper clearance based on design parameters, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).*

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16. In re claim 11, 15, 16, Kojima et al in view of Sasaki et al as applied to claim 1 inherently disclose that the motor element is a self-starting permanent magnet synchronous motor (see Kojima et al paragraph [0044]) the motor element has plurality of conductor bars (inherently) of a cage conductor for start on the outer periphery of the rotor core, and the permanent magnet is disposed in the inner peripheral side of the conductor bars.

17. In re claim 12, 17, 18 Kojima et al in view of Sasaki et al as applied to claim 1 disclose the claimed invention:

Kojima et al disclose:

- The permanent magnet (315a) is a rare-earth magnet, in paragraph [0052], lines 5-7.

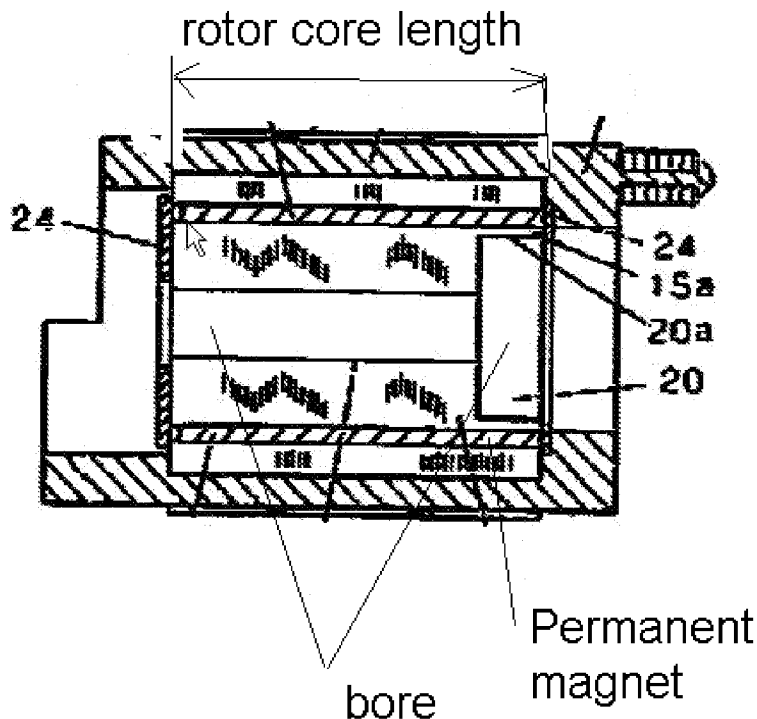
Response to Arguments

18. Applicant's arguments with respect to claims 1 -18, filed June 01, 2010 have been considered but are not persuasive.

19. Applicant on page 2, paragraph 2 argued that Fumitoshi fails to disclose permanent magnets extending from an axial end of the rotor iron core that is opposite from the bore part and asserted that Fumitoshi depicts permanent magnets 21 extending from the axial end of rotor iron core 18 that includes the bore part 20 which is different from the claimed invention that requires the permanent magnet be positioned in the rotor core so that it extends from an end of the rotor core opposite the hollow bore.

In responding to applicant's argument:

Please refer to annotated drawing of Fumitoshi below.



As clearly shown in the figure above the hollow bore defines the whole axial length of the rotor core including the bore labeled as 20. Please note that applicant's claim 1 only recite that **"the rotor core defines a hollow bore extending from a first axial end of the rotor core, the first axial end on the compressing element side of the rotor core"**. The rotor core as clearly labeled above has two bores one having larger inside diameter and the other smaller inside diameter. Part of the hollow bore (labeled as 20) extends from a first axial end of the rotor core (which is the right end of the rotor core) and is on the compressing element side of the rotor core (which is shown in the assembly figure 9). The phrase "opposite the hollow bore " could thus be interpreted as

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being from either ends of hollow bore and in both cases it is seen that the permanent magnets extends from the end of the bore.

On page 3 paragraph 4 applicant argued that Kojima fails to disclose permanent magnet 315a extending from an end of the rotor 314 opposite the hollow bore 306 and asserted that Kojima teaches positioning a magnet that is shorter than the rotor core in the center of the rotor core. In paragraph 5 applicant also argued that Sasaki provides no additional teaching from what is already disclosed by Kojima. Also applicant argued that Sasaki fails to disclose rotor core 42 including a hollow bore thus does not provide any teaching for positioning magnet 45 relative to a bore.

In responding to applicant's argument:

Kojima fails to disclose permanent magnet 315a extending from an end of the rotor 314 opposite the hollow bore 306 but this deficiency is cured by the teaching of Sasaki as pointed out in this office action. Sasaki also discloses a rotor core including a hollow bore (51). Please note that a typographical error pointed out by the applicant has been corrected.

Conclusion

20. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is

filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amene S. Bayou whose telephone number is 571-270-3214. The examiner can normally be reached on Monday-Thursday, 9:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)? If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

|
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